

IN THE CLAIMS:

1-5 (Canceled)

6. (Currently amended) A process for producing a rare earth oxide superconductor, comprising: ~~applying a mixture obtained by~~
mixing cerium with 5 to 90 mol%, in terms of the metal content, of at least one
~~or two or more elements selected from rare earth element elements~~ Re selected
from the group consisting ~~(Re represents any one of elements of Y, Nd, Sm, Gd, Eu, Yb, Ho, Tm, Dy, La and Er;)~~ ~~with cerium~~
applying the mixture onto ~~to~~ a surface of a metal substrate by a liquid phase,
metal organic deposition; process and
calcining the applied mixture performing calcination at a temperature of 900°C
or higher and lower than 1200°C under a reduced pressure of 0.1 Pa or higher and
lower than atmospheric pressure to form an intermediate layer comprising a cerium
oxide₁₇, and then
forming a rare earth oxide superconducting layer on the intermediate layer.

7. (Original) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the content of the rare earth element Re in the mixture is 20 to 60 mol%, in terms of the metal content.

8. (Canceled)

9. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the intermediate layer is formed by calcination under a pressure ranging from 50 to 500 Pa.

10. (Currently amended) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the intermediate layer is formed by calcination at a temperature ranging from ~~fron~~ 950 to 1150°C.

11. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein metal substrate is a biaxially textured metal substrate.

12. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the rare earth oxide superconducting layer is directly formed on the intermediate layer.

13. (Currently amended) A process for producing a rare earth oxide superconductor, comprising: ~~applying a mixture obtained by~~

~~mixing cerium with 20 to 60 mol%, in terms of the metal content, of at least one or two or more elements selected from rare earth element elements Re selected from the group consisting (Re represents any one of elements of Y, Nd, Sm, Gd, Eu, Yb, Ho, Tm, Dy, La and Er₁) with cerium~~

~~applying the mixture onto to a surface of a biaxially textured metal substrate by metal organic deposition; MOD method, and~~

~~calcining the applied mixture and performing calcination in a reducing gas atmosphere containing in which 0.1 to 10% of H₂, is added to an Ar and N₂ gas mixture, at a temperature ranging from 950 to 1150°C and under a pressure ranging from 50 to 500 Pa, to form an intermediate layer comprising a cerium oxide₁, and then~~

forming a rare earth oxide superconducting layer on the intermediate layer.

14. (New) The process for producing a rare earth oxide superconductor according to Claim 6 wherein the calcining is at a temperature of 950-1150°C.